

Appln. No.: 10/502,241  
Amdt. Dated: March 21, 2007  
Reply to Office Action of September 27, 2006

REMARKS

Claim 17 stands rejected under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Specifically, claim 17 recites an insoluble alkali carbonate, whereas, the Examiner submits that all alkali metal carbonates are soluble.

Applicant respectfully traverses the foregoing rejection and requests reconsideration in view of the following comments.

Alkali metal carbonates may be classified according to their solubility into two main sub-groups; namely, soluble alkali metal carbonates that are soluble in water, and insoluble alkali metal carbonates that are insoluble in water (but are soluble in acid). The latter sub-group, which is the subject of the present invention, comprises compounds also referred to as alkali earth metal carbonates, including calcium carbonate and magnesium carbonate. Both of these insoluble alkali earth metal carbonates are specifically described in the present application at, for example, the first paragraph of page 7, the second paragraph of page 9, and in Example 1 on page 10. Further, the Example on page 10, which describes the production of precipitated calcium carbonate, clearly teaches the precipitation of calcium carbonate from a water-based solution of calcium oxide into which carbon dioxide is added. In this context it is submitted that it would be clear to one skilled in the art from these passages that the term "insoluble alkali metal carbonate" is intended to mean those alkali metal carbonates that are insoluble in water, and this is supported by the recitation of two such alkali metal carbonates in the first paragraph of page 7.

Accordingly, the applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 16 and 23-25 stand rejected under 35 USC §102(b) as anticipated by US 5,984,678 (Bruns et al). Bruns is cited as disclosing a method of removing plaque from and polishing teeth by blasting the teeth with an erasing agent. The Bruns process

includes propelling the erasing agent of round 10-200 micron spherical particles at the tooth for a period of time so the larger particles break up and smaller ones cover the surface of the tooth. The large spherical particles are made of agglomerated smaller ones loosely bound, which gives the larger particle an irregular surface. From this the Examiner submits that in order to break the particles sufficiently, it is inherent that they be propelled at an angle of incidence of 0-60°, and that the relative position of the blasting apparatus with respect to the patient's tooth necessitates this angle. The Examiner also finds that the particles are propelled with a stream of air, concluding that the erasing agent is non-aqueous. Finally, Bruns teaches that calcium carbonate (which the Examiner agrees is insoluble) makes up the particles of the erasing agent.

This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Bruns describes a process for treating a surface that employs friable abrasive particles that are projected at the surface to be treated (col. 1, lines 7-10). The particles are described as "snowball like spheres" that comprise thousands of tiny particles loosely bound together allowing the spheres to crumble when they impinge upon the targeted surface (col. 1, lines 29-35). The net effect of the spheres striking during sandblasting is that a coating on the surface is softened and removed (col. 1, lines 55-57). The Examiner submits that it would be inherent that the process of Buns et al would involve projecting the particles at the surface at an angle of incidence of between 0° and 60° "in order to break the particles sufficiently". In fact, the opposite is the case; projecting an agglomerated particle at a surface at a shallow angle serves to reduce the impact energy, thereby reducing the propensity of the particle to shatter. Rather, when projected at such an angle of incidence, the tendency would be for a particle to roll or to glance off the surface. In Bruns et al it is clear that the object is to shatter the particle, and to achieve this, the optimum angle of incidence would be at or approximating to 90°. Otherwise, the particles would fail to shatter as intended. In any event, it is pointed out that nowhere in the disclosure of Bruns et al is an angle of incidence of 0° to 60° described, or even hinted

at. Rather, the teaching of Buns et al is aimed at ensuring the particles shatter upon impact and, therefore, rather than suggesting the angle of incidence of the present claim 16, it teaches away from it.

With regard to the Examiner's comments concerning the relative position of the blasting apparatus and the patient's tooth, it is respectfully submitted that nozzles employed in dental basting operations generally have cranked heads which allow the particles be projected at the surface at an angle or, of approximately, 90°.

Present claim 16 clearly recites a shallow angle of incidence of between 0° and 60°, and recites that this angle is intended to ensure that the particles of the erasing agent roll along the surface. The purpose of this rolling is to ensure that the particles effect an erasing action on the surface, picking up a coating as they roll. This is clearly distinct from the process of Buns et al.

Applicant's process is not described in Bruns et al, nor is it even suggested. In contradistinction, the process of Bruns et al teaches the complete opposite, namely the particles being projected at the surface such that they will shatter upon impact.

Accordingly, it is respectfully submitted that the subject matter of claim 16 is not anticipated by (nor is it an obvious modification of) the process taught in Bruns et al.

Claim 17 stands rejected under 35 USC §103(a) as being unpatentable over Bruns et al in view of US 6,485,304 (Beerstecher et al). Beerstecher et al is cited for its disclosure of the use of sodium bicarbonate as a blasting dental powder. The Examiner concludes that it would have been obvious to one skilled in the art to modify the particles of Bruns et al by substituting sodium bicarbonate as taught by Beerstecher, since sodium bicarbonate is a suitable abrasive in the art of dental abrasives.

This rejection is also respectfully traversed and reconsideration is requested in view of the following comments.

In addition to the arguments made above in support of the patentability of claim 16, it is noted that the disclosure in Beerstecher et al of sodium bicarbonate, in this document (claim 13), is made in the context of it being a component in a prophylactic

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flushing or rinsing liquid. It is not mentioned as an agent for removing a coating from the surface of a tooth. Further, the process of the present invention, whereby particles are projected at a tooth at a shallow angle of incidence to ensure an erasing action on the tooth by means of the particle rolling along the surface of the tooth is not disclosed or suggested by Beerstecher.

For all of the foregoing reasons, claims 16, 17 and 23-25 are believed to be allowable and withdrawal of their rejections is respectfully requested.

Respectfully submitted,

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